

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

AI 1. (amended) A simulator for simulating the firing of a weapon at one of a plurality of targets, each target having a respective shape, comprising:

- a) a housing substantially identical in size and shape to at least a discrete portion of the weapon;
- b) a sensor, operationally connected to said housing, for acquiring a plurality of images of at least one of the targets; and
- c) an image processor for detecting and analyzing changes among said images and for initiating control signals based on said analysis
- d) for each target, an infra-red lamp that is alternatively:
 - i) activated by one of said control signals to flash at a unique, respective frequency and
 - ii) deactivated by another of said control signals; and
- e) a mechanism for transmitting said control signals to said lamps

whereby analysis by said image processor of light produced by a said infra-red lamp and detected by said sensor indicates at which target from amongst said plurality of targets said housing has been, thus accurately simulating the aiming step of the firing of the weapon.

2. (canceled)

3. (previously presented) A system of claim 1 in which said mechanism is wireless.

4. (previously presented) The system of claim 1 in which said mechanism is wired.

5. (previously presented) The system of claim 1 in which said sensor includes a CCD television camera.

6. (previously presented) The system of claim 1, in which said sensor includes part of a guidance system of an electro-optically guided missile.

7. (previously presented) The system of claim 1, wherein said image processor includes a look-up table that includes data about shapes of respective said targets, said image processor being operative to calculate an accuracy of an aim at the target whereat the firing of the weapon is simulated.

8. (previously presented) The system of claim 1 further comprising:

d. at each target, a pyrotechnic charge that is detonatable by a respective said control signal.

9. (previously presented) The system of claim 8, wherein said image processor includes a look-up table that includes data about shapes of respective said targets, said image processor being operative to calculate an accuracy of an aim at the target whereat the firing of the weapon is simulated.

10. (previously presented) The system of claim 9, wherein said pyrotechnic charge is differentially detonatable in accordance with said accuracy of aim calculation.

11. (amended) A method of simulating the firing of a weapon at one of a plurality of targets, comprising the steps of:

a) providing:

- (i) a weapon simulator including a housing substantially identical in size and shape to at least a discrete portion of the weapon;
- (ii) a sensor, operationally connected to said housing, for acquiring a plurality of images of the target ; and
- (iii) an image processor for detecting and analyzing changes among said images and for initiating control signals based on said analysis;
- (iv) for each target, an infra-red lamp that is alternatively:

(A) activated by one of said control signals to flash at a unique, respective frequency and

(B) deactivated by another of said control signals; and

(v) a mechanism for transmitting said control signals to said lamps;

b) aiming said housing at one of the targets;

c) activating all said infra-red lamps;

d) acquiring a plurality of images, at predetermined time intervals, of the target whereat said housing is aimed;

e) passing said images to said image processor;

f) calculating a flash frequency of the lamp on the target whereat said housing is aimed, by comparing successive said images; and

g) identifying the target whereat said housing is aimed, by comparing said calculated flash frequency with a look-up table of said respective frequencies

whereby said identifying at which target from amongst said plurality of targets said housing has been aimed is an accurate simulation of the aiming step of firing of the weapon.

12. (previously presented) The method of claim 11, further comprising the step of:

h) visually simulating a hit.

13. (previously presented) The method of claim 12, wherein said simulating is effected by steps including:

i) providing, at each target, a pyrotechnic charge; and

ii) detonating said charge at the target whereat said housing is aimed.

14. (previously presented) The method according to claim 13, wherein said charge is detonated differentially.

15. (previously presented) The method of claim 11, further comprising the step of:

h) determining an accuracy of said aim.

16. (previously presented) The method according to claim 15, wherein said determining of said accuracy is effected by steps including:

- i) providing a look-up table that includes data about shapes of the targets; and
- ii) comparing said images of the target with said shape data.

17. (previously presented) The method of claim 15, wherein said determining of said accuracy is effected by steps including calculating a trajectory from said housing to the target whereat said housing is aimed.
